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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Jackie Y. Ying et al.  
Serial No: Not Yet Assigned  
Filed: Herewith  
For: NANOCRYSTALLINE APATITES AND COMPOSITES, PROSTHESES  
INCORPORATING THEM, AND METHOD FOR THEIR PRODUCTION

Examiner: Not Yet Assigned  
Art Unit: Not Yet Assigned

Box Reissue  
Commissioner For Patents  
Washington, D.C. 20231

Sir:

PRELIMINARY AMENDMENT

Before beginning examination of the above-identified application on its merits, please amend the application as follows:

IN THE CLAIMS

Please add the following claims:

45. (New) A method, comprising:  
providing a composition comprising apatite particles having a dimension of less than about 1  $\mu$ m and a surface area of at least about 40 m<sup>2</sup>/g; and  
sintering the composition to form a densified apatite structure having an average XRD crystal size of less than about 250 nm, a density of at least about 98%, and a compressive strength of at least about 500 MPa, wherein the densified apatite structure undergoes apatite phase decomposition of less than about 10% when exposed to conditions of at least about 1300 °C for at least about 2 hours.
46. (New) The method of claim 45, wherein the particles have a dimension of less than about 500 nm.
47. (New) The method of claim 46, wherein the particles have a dimension of less than about 250 nm.